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IMPACT OF CORONARY ARTERY CALCIFICATION SCORE ON PROGNOSIS OF INDIVIDUALS WITH AND WITHOUT METABOLIC SYNDROME; RESULTS FROM THE MULTINATIONAL CORONARY CT ANGIOGRAPHY EVALUATION FOR CLINICAL OUTCOME: AN INTERNATIONAL MULTICENTER REGISTRY (CONFIRM)

Poster Contributions
Hall C
Saturday, March 29, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Coronary CT Angiography and Outcomes
Abstract Category: 18. Non Invasive Imaging: CT/Multimodality, Angiography, and Non-CT Angiography
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Background: Coronary artery calcium score (CACS) has emerged as an important prognostic indicator for coronary artery disease (CAD) risk. Metabolic Syndrome (MetS) is shown to increase the risk of cardiovascular disease and mortality. The purpose of this study is to assess the impact of CACS on CAD prognosis in patients with and without MetS.

Methods: The study cohort consisted of 27,125 consecutive individuals who underwent 64 detector row CCTA for suspected CAD at 12 centers from 2003 to 2009. Patient with previously known CAD, unknown statin use or unavailable lipid profile were excluded. MetS was defined as per NCEP/ ATP III criteria. We focused on 1973 patients who had measured risk factors for MetS, were not on statin therapy and had CACS measurements. Of these patients, 619 patients met the diagnostic criteria for MetS. Propensity matching was performed for age, sex, smoking status and family history of premature CAD with patients without MetS (no-MetS) with 0, 1, or 2 MetS risk factors. Patients in MetS and no-MetS subgroups were divided based on their CACS (CACS=0, 1-99, 100-399 and ≥400). Major adverse cardiac events (MACE) was defined as MI, acute coronary syndrome, all cause mortality and late revascularization. MACE was assessed by risk-adjusted Cox proportional hazards models.

Results: There were 51 (2.58%) MACE in the total study population over follow-up of 2.2 years.) The lowest MACE rate was observed in those without CACS and without risk factors (0 events), whereas those with CACS ≥ 400 and MetS had the highest MACE rate (12.8%). When divided based on CACS (CACS=0, 1-99, 100-399 and ≥400), there was no significant difference in MACE between MetS and no-MetS subgroups. Moreover, when examined MetS subgroups based on CACS, there was incremental increase in MACE with increase in CACS (0.39% vs 1.52% vs 3.8%vs 12.9% for MetS groups with CACS=0, 1-99, 100-399 and ≥400, respectively ($p<0.001$)). The receiver operator characteristics curve demonstrated that the addition of CACS increases the prognostic ability beyond presence or absence of MetS.

Conclusions: Addition of CACS contributes significantly to predicting outcomes in individuals with and without MetS or its individual risk factors.